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## SOME WONDERS OF IDAHO.

BY E. W. JONES.

A few miles north of the town of Malad, in Idaho, and close to the northern line of Utah, stands the northern rim of the vast basin which once held the inland sea, now universally called Lake Bonneville. This ridge looks down to the north upon a broad green valley, sweeping away to the east and west, and from it winds down steeply the old stage-road from the "Great Basin" to Montana. The valley slopes gently from east to west. Its upper end is the point where the waters of the great lake broke over their barriers and began their journey to the ocean, and down this broad valley they swept, a mighty river no doubt. At present the valley shows no striking indications of having once been the channel of a great river. The adjacent mountains for the most part slope smoothly to it, and the broad bottom, through which a pretty creek meanders, is rich pasturage and hay land throughout its whole extent. It is called Marsh Valley and the creek Marsh Creek. At its upper end are two small lakes and a small extent of marsh land, from which probably the valley derives its name.

At the lower end it bends to the north, and four or five miles further on a great black vomit of lava has poured out from a canyon, rugged with rocks of basalt, on the right, down which tumbles a mountain torrent, the Portneuf River. This stream of lava poured down the valley, mostly filling it, northerly and westerly for thirty miles or more till it merged into the sea of fire which then filled the valley of the Snake River. Other streams followed the first, and not all reached its destination. The last flow was plainly less fluid, and about ten miles down terminates abruptly in a bluff several hundred feet high. The sides of these lava flows are high cliffs of clean black basalt. On either side of the lava, which occupies about the center of the valley, run the two creeks, Marsh Creek and the Portneuf, to blend into the Portneuf only at a point below the bluff. The stream of lava is a half mile or more wide, and, if my memory serves me, covered with a dense growth of sage-brush and other shrubs. The other streams crop out lower down the valley, showing benches along the sides and tables in the bottom. With edges broken squarely off and abrupt sides from a few to perhaps fifty feet high, their almost coal black faces are in contrast strangely with the verdure which in the spring-time covers up-land and low-land, for the pasturage afforded by their slopes is

rich. Where these lower streams enter the valley of the Snake River they disappear beneath the soil and do not show themselves again for many miles. The plain of the Snake, from the mouth of the Portneuf canyon, spreads before the eye seemingly almost as boundless as the ocean. To the north a fringe of snow-covered peaks may show themselves above the haze. They are the tops of the Sawtooth Range, a hundred and fifty miles away. Nearer, apparently in the midst of the plain, three lonely buttes lift their heads above it and add to the impression of the great distance of the mountains beyond. The real width of the valley at this point is not far from sixty miles, as the spurs of the Sawtooth and Salmon River ranges on the north reach down to and over its edges and show their points badly scorched by its fires. The great river which gives its name to the region runs here for a long distance along the eastern and southern edge of the great lava field. It has cut its channel through the field in places, almost as squarely, as if done with the tools and skill of the engineer. At Eagle Rock, where the Utah and Northern R. R. crosses it at about the center of eastern Idaho, it has cut two channels and left a tall pillar in the centre, as if intentionally, for a pier for the bridge. The water here in the deepest channel is, if I mistake not, a hundred or more feet deep. Here the edge of the field breaks abruptly away from the river, and, in a northwesterly direction, fifty miles of travel takes one, over a fairly good road, across it. Midway on the road is a stream stocked with trout. Of many streams which lose themselves in this lava, most contain fish—some trout, some other kinds. How did they get there? There is scarcely one of them nearer than twenty-five miles to other fish-stocked water.

The Utah and Northern R. R., after leaving Eagle Rock, runs northerly along the Snake River for a few miles and then strikes across the lava near its northeastern edge, over a sandy, dreary region almost without a redeeming feature, till it begins to climb the divide to Montana, eighty miles or more.

At Blackfoot, twenty-two miles south of the R. R. bridge, is another for wagons and stock, and from this point one road now leads across the lava beds for a distance of forty-two miles without water, except what is hauled from the river in barrels to a point about half-way. This is the present stage-road to the Lost River and the Salmon River country, laid out and opened with much expense and trouble. At its half-way point an attempt has been made, by sinking hundreds of feet into the basalt, to find water, but though it is heard running below, it has, I believe, eluded the search. After the removal of a few inches of soil from the surface, the work of sinking requires the use of powder and drill. No inch of depth can be attained without

them, and so far, in the desert, the work is carried on at a great disadvantage. During the winter season, and sometime into spring, pools of water fit for use of man and beast may be found in the hollow places along the roads; but these dry up later on. From the river bottom the ground rises up by steps, abrupt and black on their fronts, for a short distance, whence it rolls away in undulations like vast billows, with crests a quarter to half amile apart, occasionally spreading out into plains and frequently sinking into rounded hollows, which are ponds when the snows melt.

Nearly everywhere the sage-brush flourishes, and a few cedars are scattered over the country. At a distance of ten miles, looking across from the south-east, the lava country seems to be covered by a dense forest of timber—the clearness of the atmosphere magnifies objects so largely.

Tufts of bunch grass, so minute as scarcely to be noticed, frequent the shelter of the bushes, and patches of rye grass the hollows, and white sage, a dwarf a few inches high, covering flats and slopes where the winds have the freest sweep, all together afford considerable sustenance to gramnivorous and herbivorous beast. The prickly pear, whose succulent heart is food and drink to the starving plains-man, is common, but low and small. It is a variety which bears no fruit; that is, its seed-pod reaches no magnitude. The sage-brush attains a height of six feet, and its trunk, of a diameter of upwards of six inches, in nooks low and protected, on the banks of little gulches, under shelter of cliffs and where much soil has drifted under stress of wind and weather. Better if the banks front northward; there they reach the greater stature, for these children of dreariness and drought take kindly to a little moisture properly administered. Who that has seen something of life upon the plains and shared the benefits of that aromatic shrub does not render it a blessing. Its fibrous bark affords material for cords and ropes, and almost holds it out to the hand to take and use, and furnishes tinder always dry underneath for the indispensable camp fire. Its sprigs make the grand blaze which warms the sojourner to the marrow in the chill of the evening or the morning. Its trunk sustains the fire and yields the coals for the broiling of the bacon, sage-hen, hare or trout. Its foliage charges all the air with the odor and balm of health. Made into a tippie or a lotion, it drives disease from the system. Many forms of vegetation adorn or relieve the otherwise barren aspect of this region, and most are useful to man in their several ways. The prevailing winds, which are vigorous and frequent, have brought and laid about their roots the sand and soil, the product of erosive agencies at work clear to the Pacific Coast. They have enabled this mass of blackness and deso-

lation to clothe itself with verdure in many places and with some forms of vegetation almost everywhere. Only in small areas does the basalt flood crop out in nakedness. In many of these the surface looks like a mass of great bubbles, a small portion only of whose upper surfaces show, and they are seamed and sutured, showing crystallization on cooling, after the nature of basalt. These great bubbles are not always, but sometimes, hollow, and have been known to furnish good shelter to good men at times, and once in a while to men of the other sort. There is no game of either feather or fur upon these plains, except along their borders. There, in marshy places, about springs and at the sinks of the creeks coming from the mountains, ducks and geese are often abundant, and grouse also, in the adjacent shrubbery. Animal life in the interior is mostly confined to the lizard and the ant. Occasionally, high in the air, water-fowl or buzzards, ravens or hawks, may be seen making their way across from one oasis to another.

The writer once witnessed a scene in this region, of which the following account will give a faint idea. In a little green basin, such as are sometimes found here, a short distance from water, and about half an hour before sunset, my friend and self drove up upon a conclave of hawks. There were certainly one hundred of them, and may have been two. They stood upon the short grass in a very regular circle of about a hundred yards in diameter, and very evenly abreast. In the centre, on a stone about eight or ten inches high, stood a solitary bird of the same species, and a few yards within the circle stood three or four others irregularly placed, a few feet apart. Every member of the conclave had his head toward the centre and evidently his attention also. We halted within, I think, not more than one hundred yards from the nearest of them. My companion, if I remember correctly, began to get his gun out, then stopped and said, "What's going on here?" The birds apparently paid no attention to us. Those nearest may have turned and looked at us and moved a little forward, but nothing more. The fellow on the rock made no sign of even deigning a look at us. It was a lonely evening and silence absolute covered the plain. We watched them at least twenty minutes. Only an occasional croak was heard, calm and deliberate, something like an amen or "so mote it be." A slight change of position on the part of some of the birds perhaps took place, and a solemn glance around by the leader. The sound of the croak was not at all like the usual cry of a hawk, and yet the birds were hawks unquestionably, but of what species I am unable to decide at this late day. I incline to the belief, however, that the birds were really buzzards; that, in common parlance, all the birds of their character are termed hawks. At the end of

twenty minutes or so after our arrival the convention broke up, and its members flew away without excitement and very little more noise from their tongues than when in the midst of their deliberations. I claim in the above to have told the cold facts and without any shadow of exaggeration. I have always considered it a scene such as it rarely falls to the lot of man to witness, and one of significance almost beyond the ability of the ordinary mind to realize. A digression into that field of speculation, however, is outside the province of this paper. Permit me to say that my companion regarded it as a court of justice and said, I believe, that the group of birds inside that part of the ring nearest to us held their heads down and were no doubt culprits. However that may be, no punishment was inflicted under our observation. The birds rose together and flew directly away from us, then scattered in different directions, and whether any of them led off victims or not I could not determine.

There is a route across the lava sea which begins at a point about opposite the mouth of the Portneuf, and which is the old stage-road to Boise, the Idaho capital. This road has had to wind about, seeking passable places in the low cliffs of lava, which rise up frequently to bar its progress across the country. It is, like Jordan, a hard road to travel, as one poor traveler once found to his cost. He started out bravely in the early morning, without his breakfast, on foot, from a house near the river, to walk across to the Big Butte, to catch a bull-train which had gone on to that point, and breakfast with it. The Butte looked about four miles off in that clear atmosphere. That evening, late, he dragged himself into camp at the Butte, nearly dead. He had walked 35 miles under a blistering sun, over an exceptionally rough road, and without water to slake his thirst or food to stay his hunger. The train waited for him, or he might have perished.

A line of extinct volcanoes almost parallels the road for a distance of four or five miles. There are seven of them within a few hundred yards of the road, besides the large volcano, the Big Butte, which stands at the north end of the line and looks like the father of the rest. They grow smaller as they extend away into the plain from the Big Butte, so that the farther one is not more than fifty feet high, with a crater fifteen or twenty feet across. The rim of this crater on one side is broken down or melted away to its bottom, a depth of twelve or fifteen feet. Its interior looks as fresh as if its fires raged but a year or two ago. About its jagged edges and down its outer slopes the red slag lies, and looks at a little distance as if it might still be hot. But all must have been extinct for ages, otherwise the traditions of the Indians would certainly mention their activity. In general appearance the volcanoes are all alike. Those farthest out indi-

cate latest action. There are three Great Buttes, of which the locally termed "Big" one is the largest, which lie in a line almost east and west, the nearer one about ten, and the farther one about seventeen miles from Big Butte, and in a line nearly at right angles to that of the smaller buttes.

The age of these larger buttes must be vastly greater than that of the smaller ones, as most all traces of their craters have been worn away. There seem to be no lava streams leading away from any of their craters. A ridge or high swell of lava connects the three last named and is covered with soil and abundant herbage. A few miles from its foot, on the north, lies a lake of considerable extent. On close examination it proves to be so shallow that one must wade some yards from shore in deep mud before he reaches water deep enough to dip up a clean drink. This lake covers many square miles during the high water of spring, but contracts to perhaps one-third of its size at that season before the next rise of the streams. It is the "sink" of Lost River, and the line of cotton-woods which marks the river's banks as it winds down from the distant mountains to its "sink," is a pleasant sight to the traveler as he looks down from the top of the ridge or the side of the Big Butte, after his dry and dreary journey across the lava country. This stream has cut its way through a low ridge of lava for nearly ten miles after leaving the mountains, and then sweeps out for ten more upon a great smooth basin, which it probably once filled to the brim. Its waters now, no doubt, percolate through the soil and find their way through the porous lava to deep channels, which take them finally to the Snake River. Well authenticated statements make it safe to assert that in many places, from below the American Falls down the river, bodies of water, of greater or less volume, and in some instances so great as to deserve to be called rivers, gush out from the high basaltic walls which there line the main stream and fall into it, though the writer has never witnessed the phenomena. It is fair proof that the numerous streams which make out into the lava region from the mountains and then disappear, find their way in channels which are sufficiently clear, though they may be devious, at once to the Snake River. It is also evident that these waters sink through the porous lava to an impervious stratum of different character along whose surface they have made their channels, and I believe the walls of the Snake River Canyon show such to be the fact.

I have here given a few facts of more or less interest, recalled entirely from memory, with regard to the second largest lava field in the world. This field reaches from Central California into British America on the north and to the borders of Montana and Wyoming on the

east, and covers an area of 150,000 square miles. It is said to have but twelve craters throughout its whole extent, and of these the majority have been described in this paper. This field is only exceeded in extent by that of the Deccan, in India, which covers an area of 200,000 square miles ; but I doubt if that great field equals in interest our own, with its vast canyons of the Snake and Columbia Rivers, its intricate and impassable Modoc region, its vast streams of basalt, black and frozen in the channels down which their floods advanced, and the varied character of the region which encloses and trenches upon it.